

Figure 1  
The Player

Play

Stop

Forward

Reverse

Record

Figure 2  
Player Function Keys

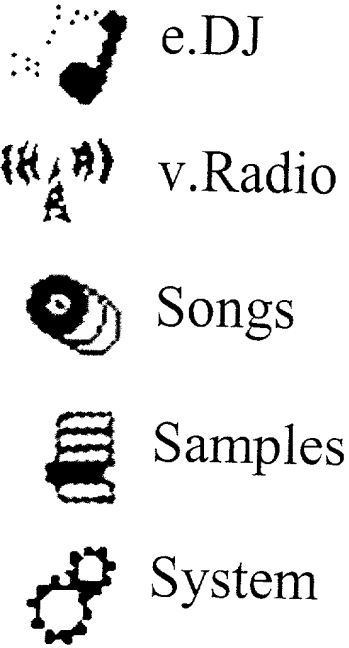


Figure 3  
Mode/Direct Access Keys



Figure 4  
Home Screen

press any key to return  
PITCH/TEMPO:  
Prefix for joystick:  
Up-down: change  
Pitch  
Left-right: change  
tempo

Figure 5  
Help Screen



Figure 6  
e.DJ Style Selection Screen

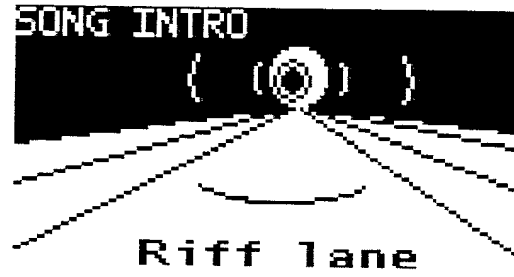


Figure 7  
e.DJ I-Way Screen



Figure 8  
e.DJ Underground Screen



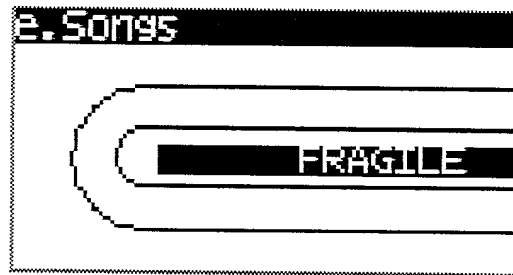


Figure 9  
Play Song Screen

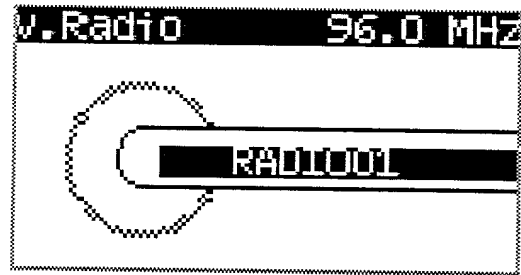


Figure 10  
Play Radio Screen



Figure 11  
List Edit Screen

CONFIGURATION

AUTOPLAY	Off
POWER OFF	Disabled
AUTOREPEAT	40 ms
EQ PRESETS	Default
STATION SEARCH	Auto
REC FORMAT	PCM

Figure 12  
Configuration Screen

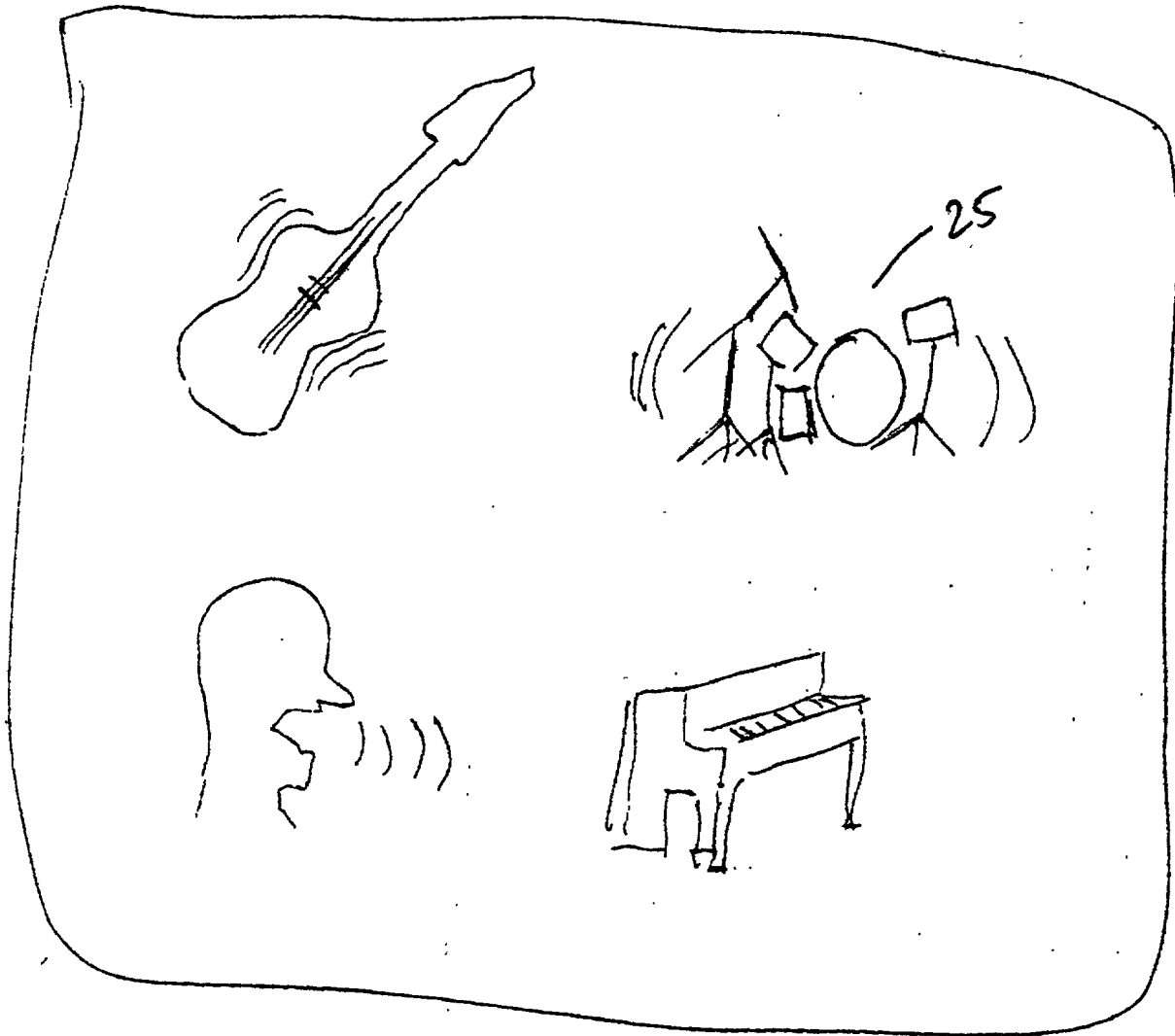


Figure 13  
Alternative User Interface for I-Way Mode

Parameter	Values	Description
AutoPlay	On/Off	If AutoPlay is On, the MadPlayer automatically starts playing the first Play list contained on a SmartMedia card when inserted.
Power Off	Disabled, 1mn to 60mn in steps of 1mn.	Auto power off delay. The MadPlayer will power off automatically after this delay if no user action is detected.
AutoRepeat	40ms to 600ms in steps of 20ms	Keyboard auto-repeat delay in milliseconds. Delay before repeating the corresponding action when a key is pressed continuously.
EQ Preset	Factory Woof Hitek Flat User	Presets for 4-band equalizer. Factory, Woof, HiTek and Flat are factory presets and fixed. User preset can be configured by the User via the System-Equalizer menu.
Mic State	On/Off	Microphone input is On or Off.
Mic Volume	0 to 31	Microphone volume.
Echo Level	0 to 127	Level of echo applied to microphone input
Echo Time	0 to 127	Microphone echo delay. 0 shortest, 127 longest.
Echo Feedbk	0 to 31	Echo feedback: 0 minimum feedback, 127 maximum feedback.
Rec Format	PCM HQFADPCM M	Format used to store recorded samples: PCM: PCM, 16bits mono, 19.31kHz HQFADPCM: High Quality ADPCM
Language	English Francais Espanol	Language used for the menus.
Sort Files	By Name By Type	Criterion used to sort files when displaying a list: by name (alphabetically) or by type (songs, samples, lists...).
Sort Presets	By Name By Freq	Criterion used to sort radio presets: by name (alphabetically) or by frequency.
Product	String	Read Only. Hardware version
Release	String	Read Only. Firmware version

Figure 14  
Configuration Parameters

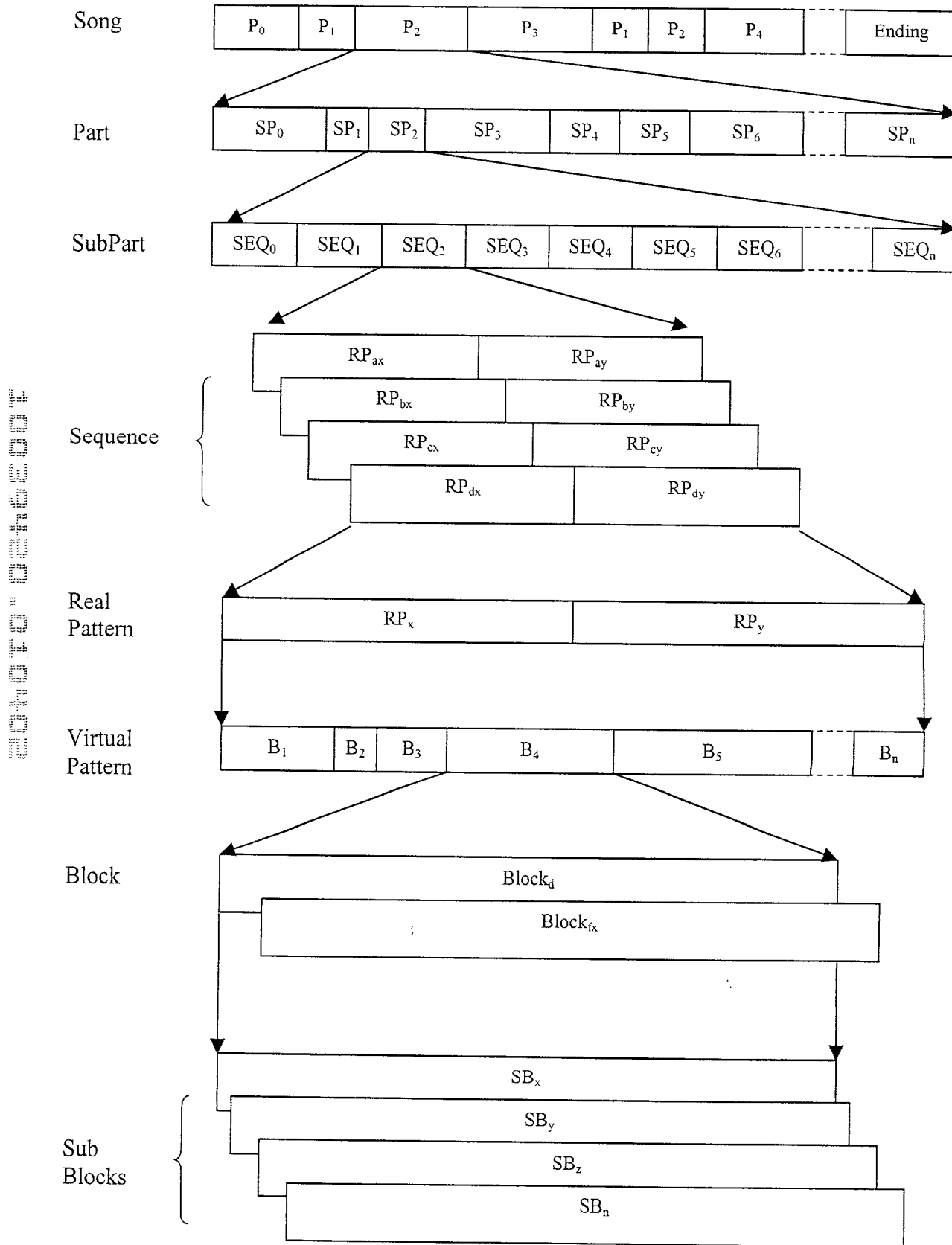


Figure 15 Song Structure

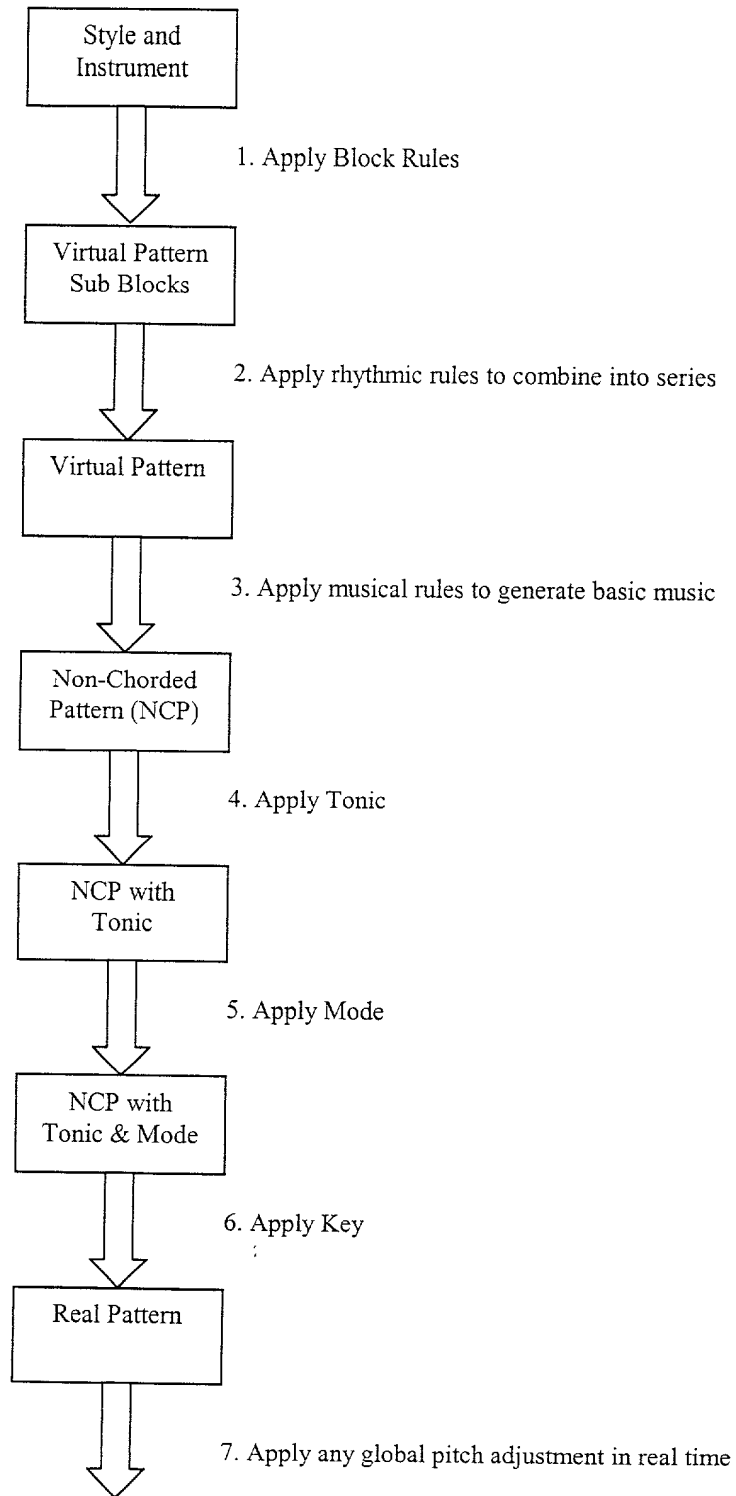


Figure 16  
General Musical Generation Flow



<i>Hexadecimal Value</i>	<i>Internal Nomenclature</i>	<i>Potential Values</i>
40	Base Note	<b>C, E, G, B</b>
41	Magic Note 1	<b>+1, -1, +2, -2</b>
42	Magic Note 0	<b>+1, -1, +2, -2, 0</b>
43	High Note	<b>+7</b>
44	Last Note	<b>C, G</b>
45	One Before Last Note	<b>E, G, B</b>
46	ALC Controller <ul style="list-style-type: none"> <li>• Harmonic Note</li> <li>• Fixed Note</li> </ul>	<b>0, +2, +4, +6, -3, -5, -7 any</b>

Figure 17  
Examples of Virtual Notes/Controllers

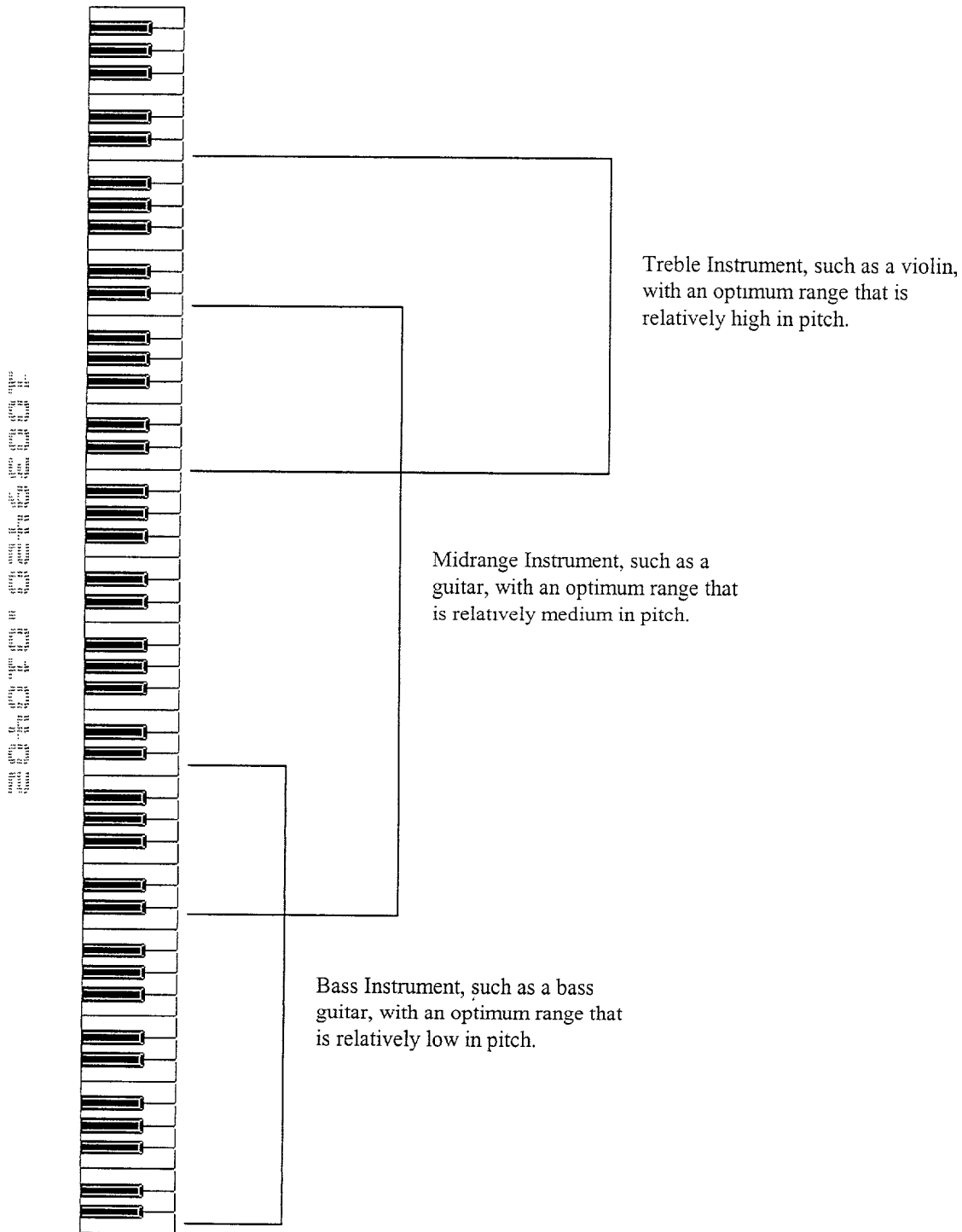


Figure 18 Example of Tessitura

	Key			
Chord	A	C	D	G
Offset	-3	0	+2	+8

Figure 19

Mode Type	Individual Notes											
All Notes	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
Natural	C	C	D	D	E	F	F	G	G	A	A	B
Lydian Descending	C	C	D	D	E	E	F#	G	G	A	A	B
Lydian Ascending	C	D	D	E	E	F#	F#	G	A	A	A	B

Figure 20



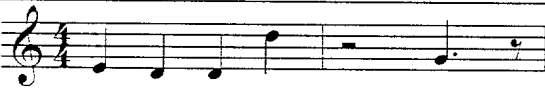

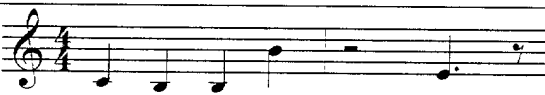

	Musical Notation	Software Notation (QN=30)
Virtual Pattern Sub-Blocks		C4 = Base Note F#4 = Magic Note Type 1 D4 = Magic Note Type 0 C#4 = High Note C4 = Base Note
Virtual Pattern (VP)		00 91 30 70 1e 81 30 00 91 36 64 1e 81 36 00 91 32 7f 1e 81 32 00 91 31 72 1e 81 31 3C 91 30 64 2d 81 30
Non-Chorded Pattern (NCP)		00 91 34 70 1e 81 34 00 91 32 64 1e 81 32 00 91 32 7f 1e 81 32 00 91 3e 72 1e 81 3e 3C 91 37 64 2d 81 37
NCP with Tonic (PwT)		00 91 31 70 1e 81 31 00 91 2f 64 1e 81 2f 00 91 2f 7f 1e 81 2f 00 91 3b 72 1e 81 3b 3C 91 34 64 2d 81 34
PwT with Mode (PwTM)		00 91 30 70 1e 81 30 00 91 2f 64 1e 81 2f 00 91 2f 7f 1e 81 2f 00 91 3b 72 1e 81 3b 3C 91 34 64 2d 81 34
Real Pattern (RP)		00 91 32 70 1e 81 32 00 91 31 64 1e 81 31 00 91 31 7f 1e 81 31 00 91 3d 72 1e 81 3d 3C 91 36 64 2d 81 36

Figure 21  
Example of VP-to-RP Flow


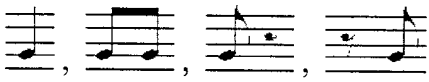

Relative Rhythmic Density	Rhythmic Blocks/Sub-Blocks	Conditions
		<p>All variations, given:</p> <ul style="list-style-type: none"> <li>• eighth note is smallest unit</li> <li>• length of 1 quarter note</li> <li>• all full rests are indicated separately as 'empty'</li> </ul>
		<p>All variations, given:</p> <ul style="list-style-type: none"> <li>• eighth note is smallest unit</li> <li>• length of 2 quarter notes</li> <li>• does not include 1 quarter note variations above</li> </ul>

Figure 22  
Rhythmic Variations based on Duration

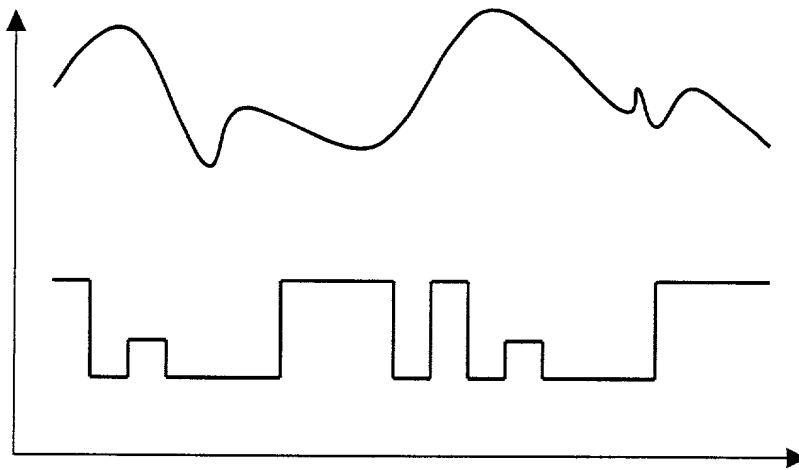


Figure 23  
Relative Mobility of Note Pitch

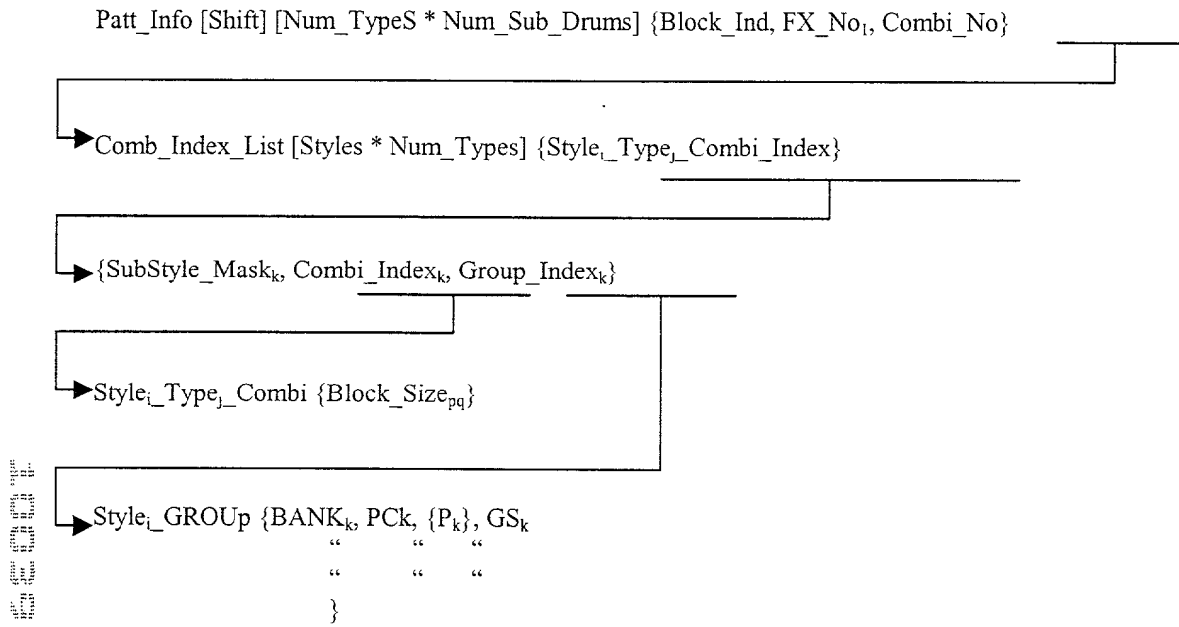


Figure 24  
Pattern Structure Creation Example





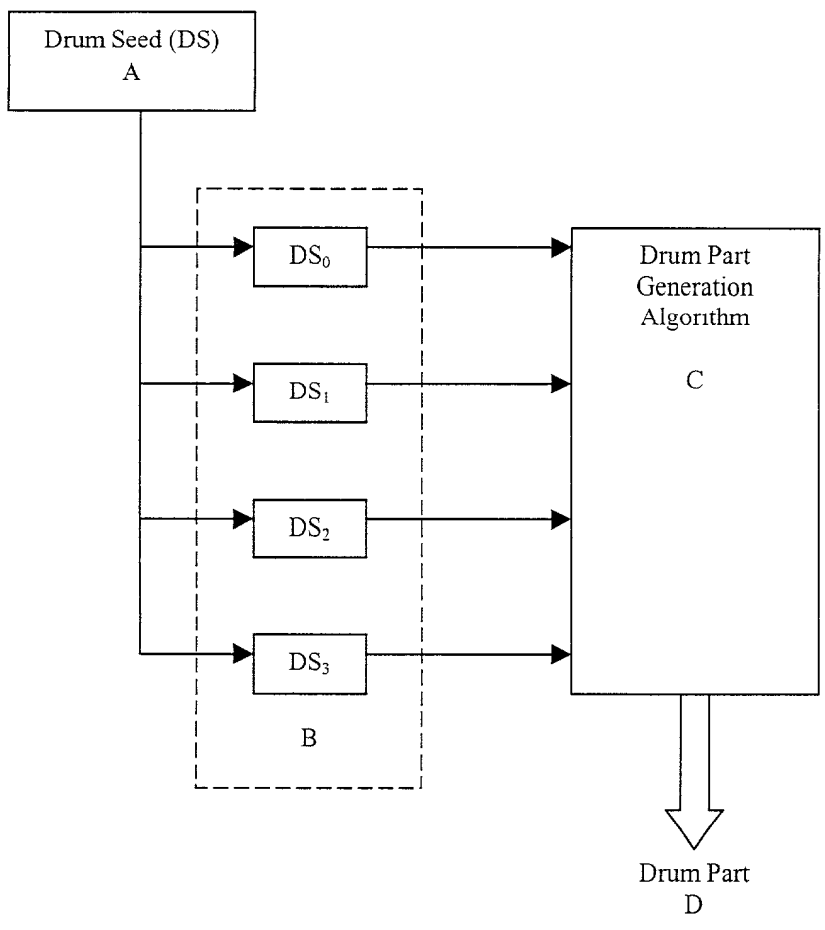


Figure 26  
Pseudo-Random Number Implementation 1

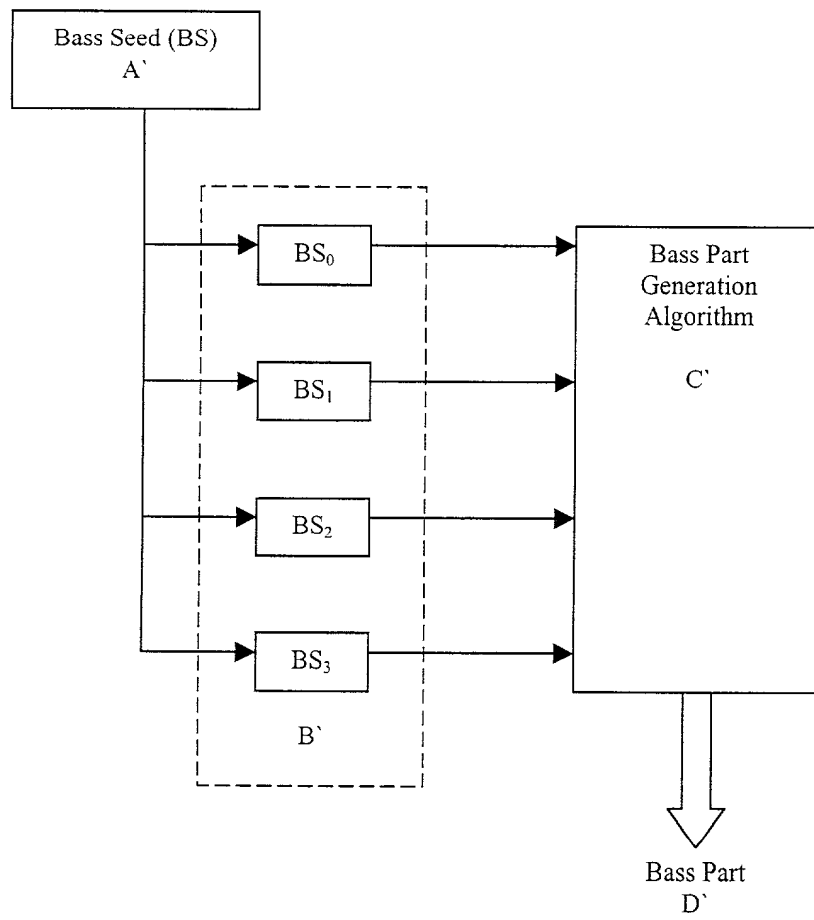


Figure 27  
Pseudo-Random Number Implementation 2

Application Revision	Firmware/application version used to generate the data structure
Style, SubStyle	The style and/or substyle
Sound Bank, Synth Type	The sound bank/synth type
Sample Frequency	How often a sample is played in song
Sample List	List of samples associated with the Style
Key	First Key used, pitch offset
Tempo	Start Tempo (e.g., in pulses per quarter note)
Instrument	Identification of a particular instrument in an instrument group. Indexed by type of instrument
State	State of instrument indexed by instrument type (e.g., muted, unmuted, normal, Forced play, solo, etc.)
Parameter	Instrument parameters indexed by instrument type (e.g., volume, pan, timbre, etc.)
PRNG Seed Values	Seed values used to initialize the PRNG routines

Figure 28  
Simple Data Structures

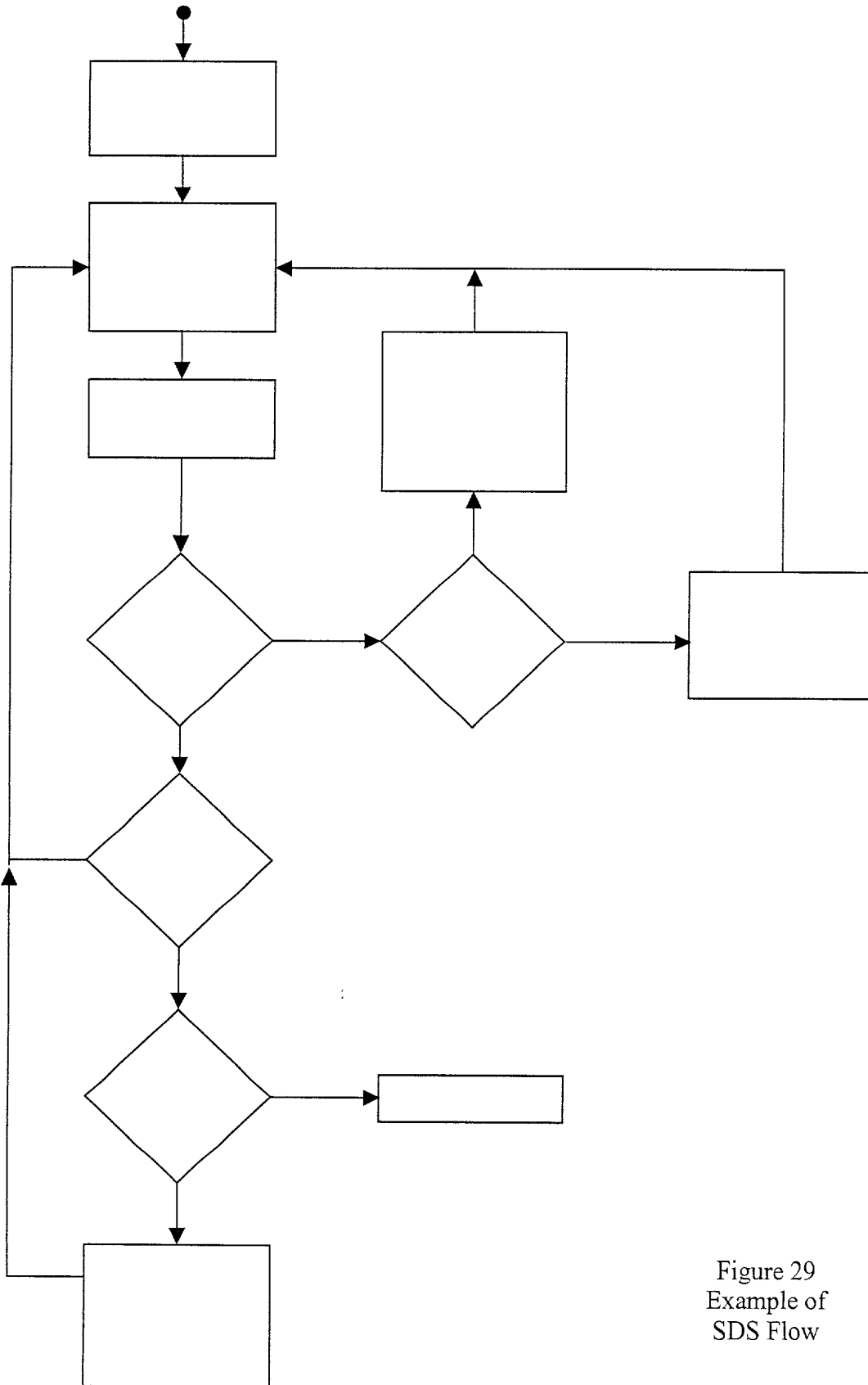


Figure 29  
Example of  
SDS Flow

Application Revision	Firmware/application version used to generate the data structure
Style, SubStyle	The style and/or substyle
Sound Bank, Synth Type	The sound bank/synth type
Sample Frequency	How often a sample is played in song
Sample List	List of samples associated with the Style
Key	First Key used, pitch offset
Tempo	Start Tempo (e.g., in pulses per quarter note)
Song Structure	Number of types, number of parts, sequence of parts, etc.
Structure	For every part: number of sub-parts, sequence of sub-parts, etc. Indexed by Part
Filtered Track	Type, function (e.g., sawtooth wave, sine wave, square wave, etc.), initial value, etc., of an effect. Indexed by Part.
Progression	Time signature, number of SEQs, list of maked types, etc. Indexed by Sub-Part.
Chord	Time stamp, chord vector, key note, progression mode, etc. Indexed by Sub-Part.
Pattern	Combination (Instrument), block data, effects data, etc. Indexed by Type.
Combination	List of instruments. Sub-set of 'Pattern' above.
FX Pattern	Effects data. Sub-set of 'Pattern' above.
Blocks	Block data. Subset of 'Pattern' above.
Instrument	Identification of a particular instrument in an instrument group. Indexed by type of instrument
State	State of instrument indexed by instrument type (e.g., muted, un- muted, normal, Forced play, solo, etc.)
Parameter	Instrument parameters indexed by instrument type (e.g., volume, param1, param2, etc.)
Nota Bene	Improvisation data (e.g., certain instruments or notes) that might be different each time the song is played.

Figure 30  
Complex Data Structures

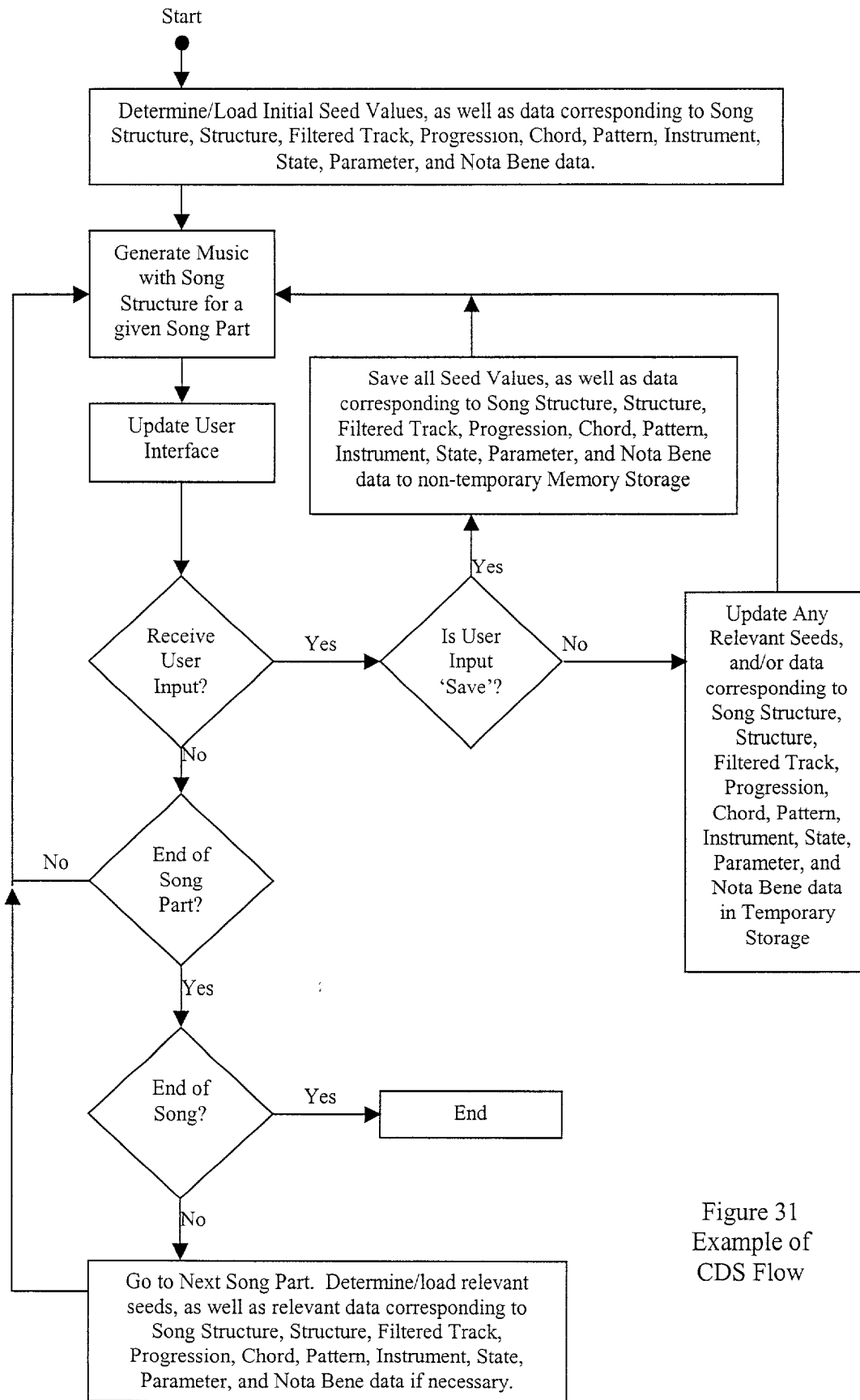


Figure 31  
Example of  
CDS Flow

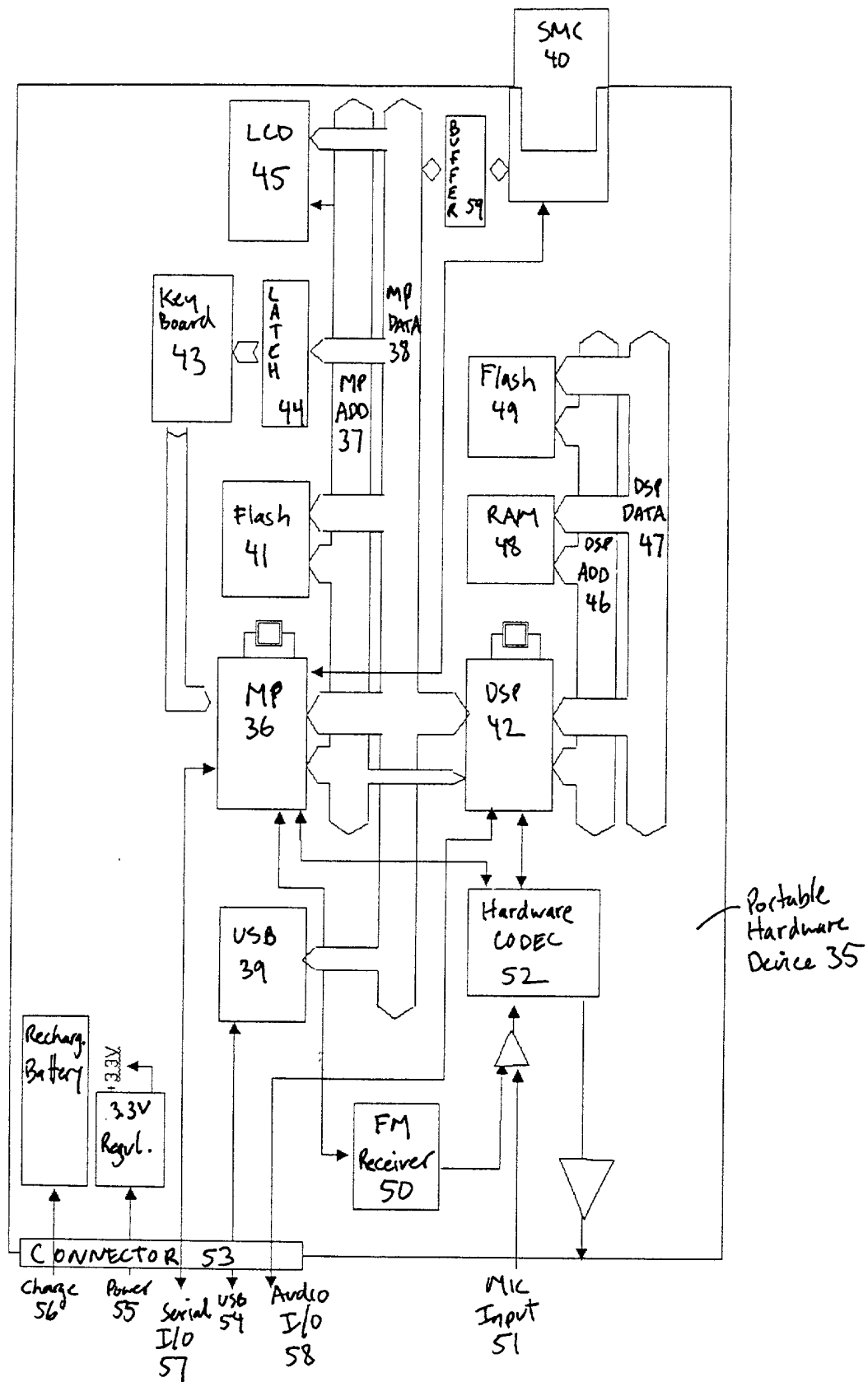


Figure 32



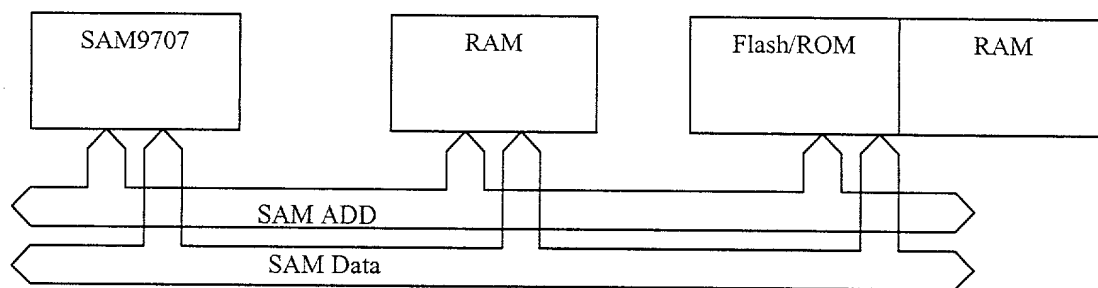


Figure 33  
Additional Variation

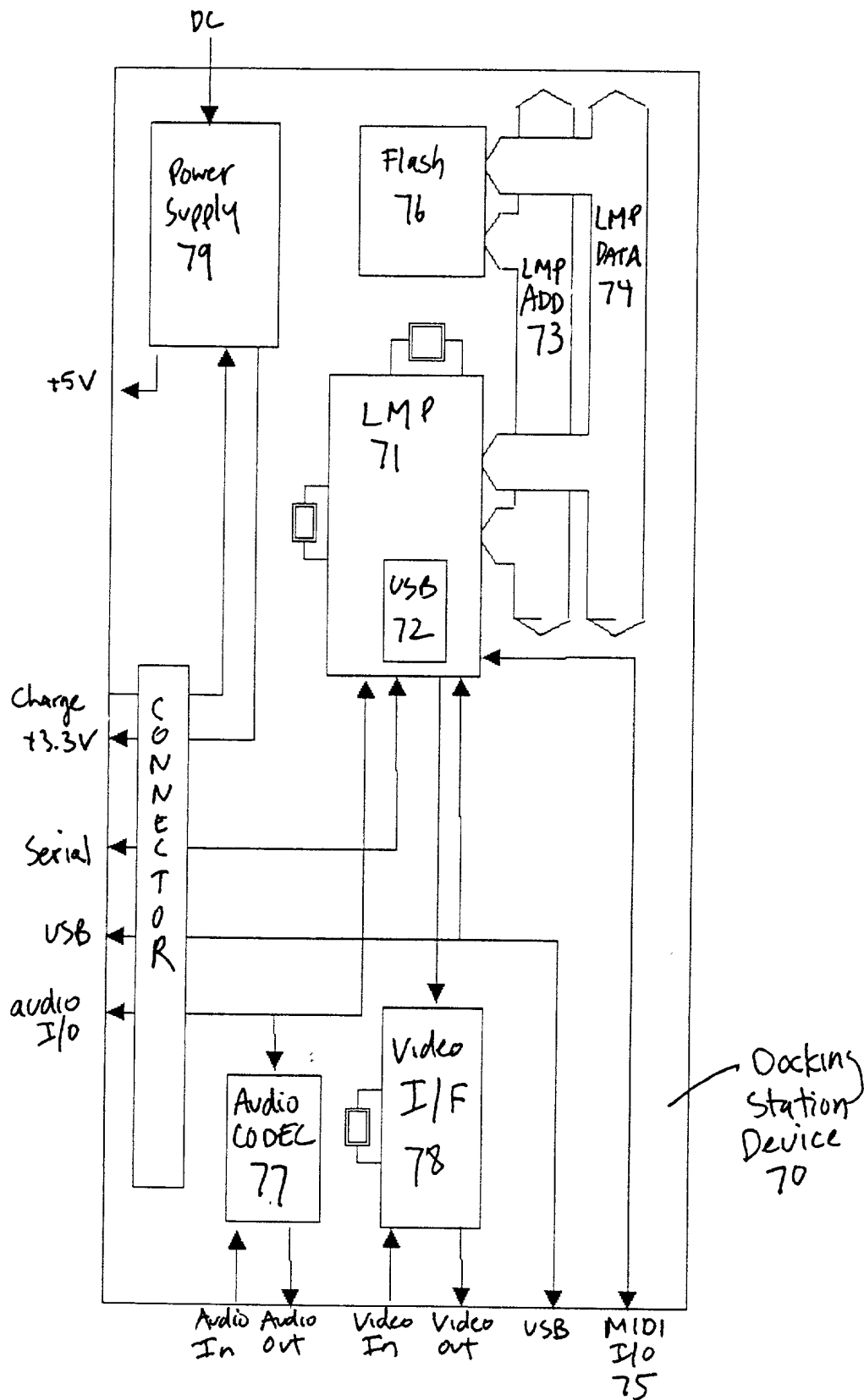


Figure 34

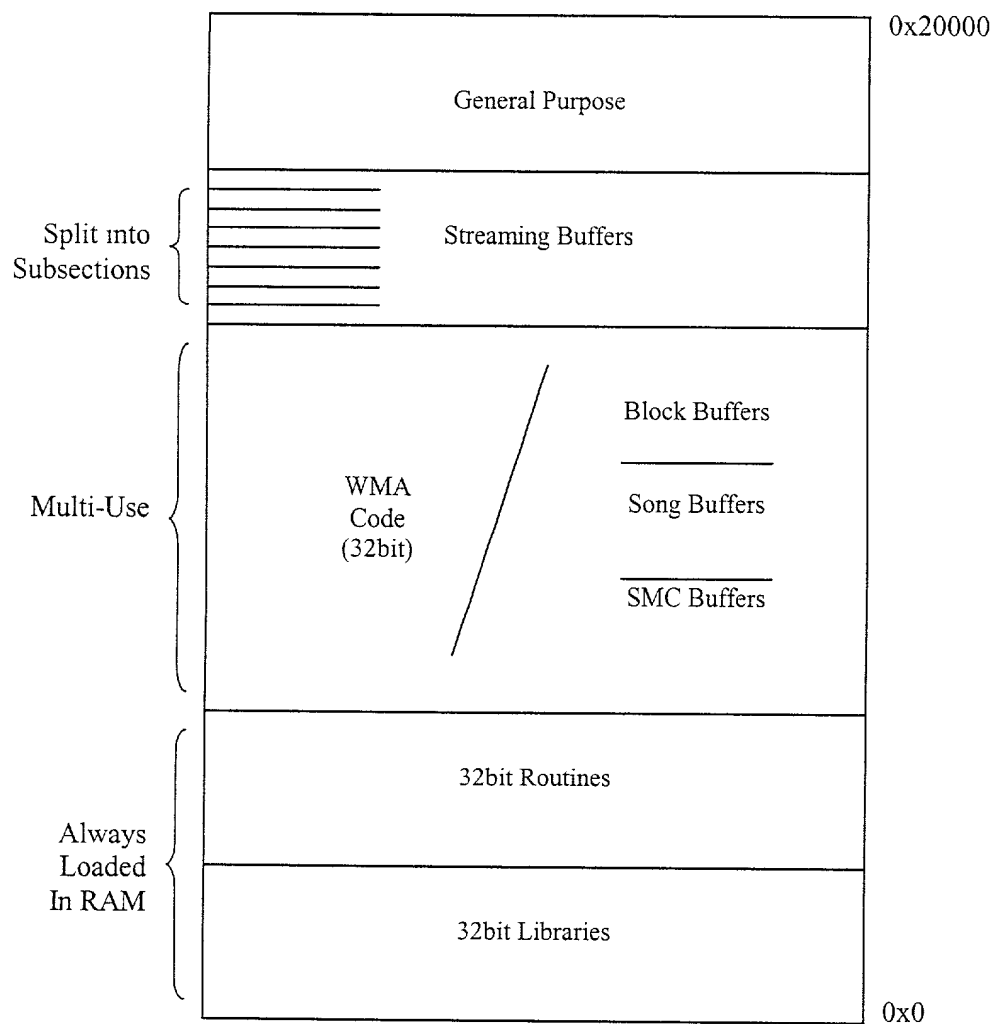


Figure 35  
Address Map for MP RAM

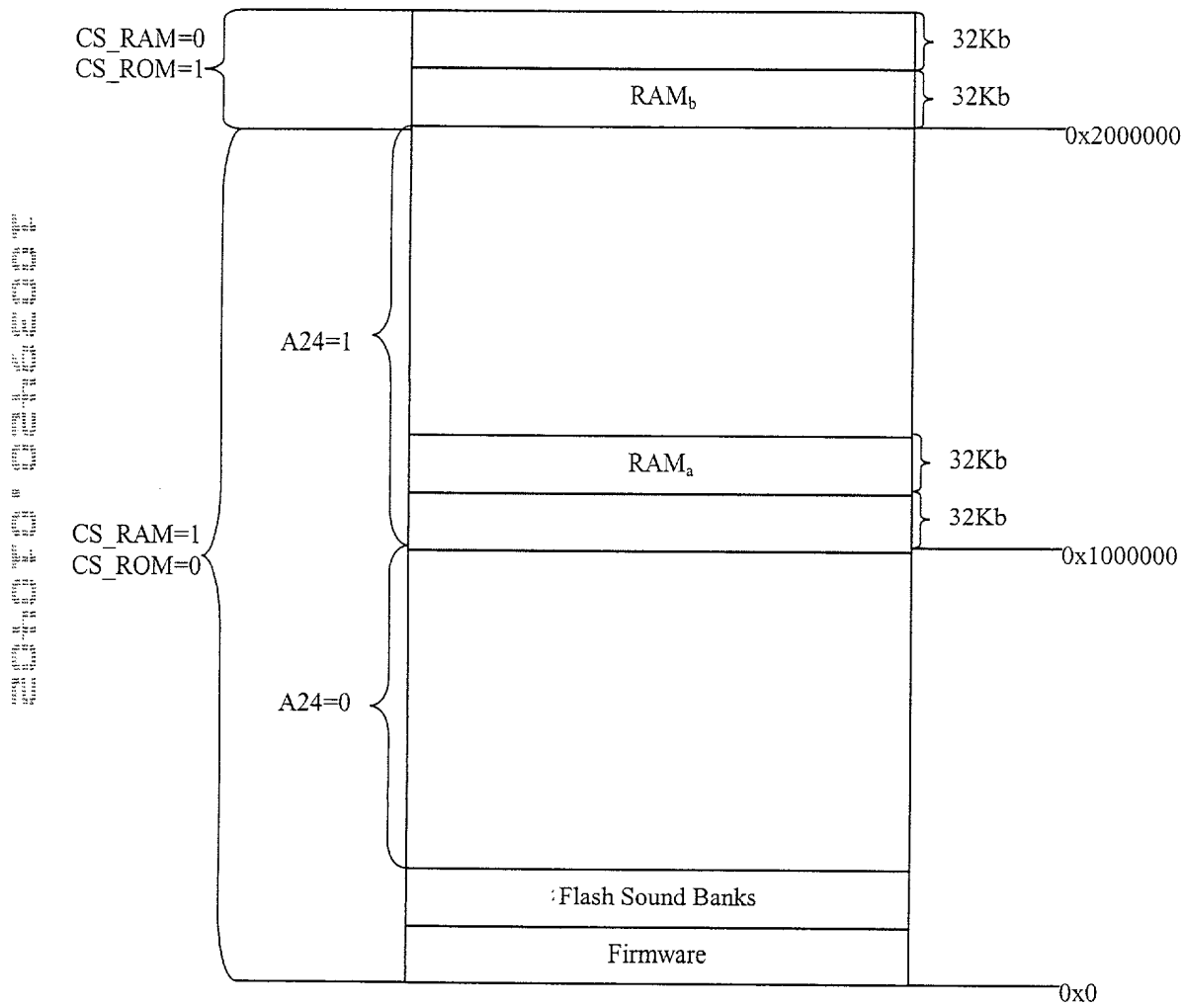


Figure 36  
DSP-Local RAM/Flash Address Space

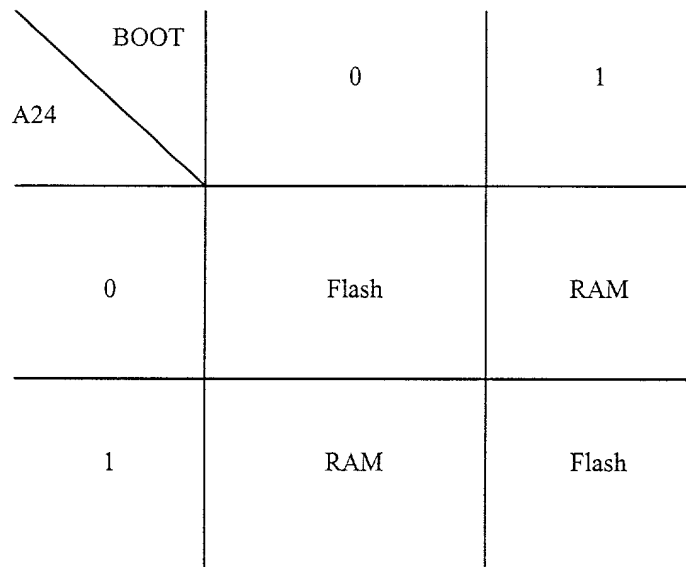


Figure 37  
Bootstrap Mode Addressing

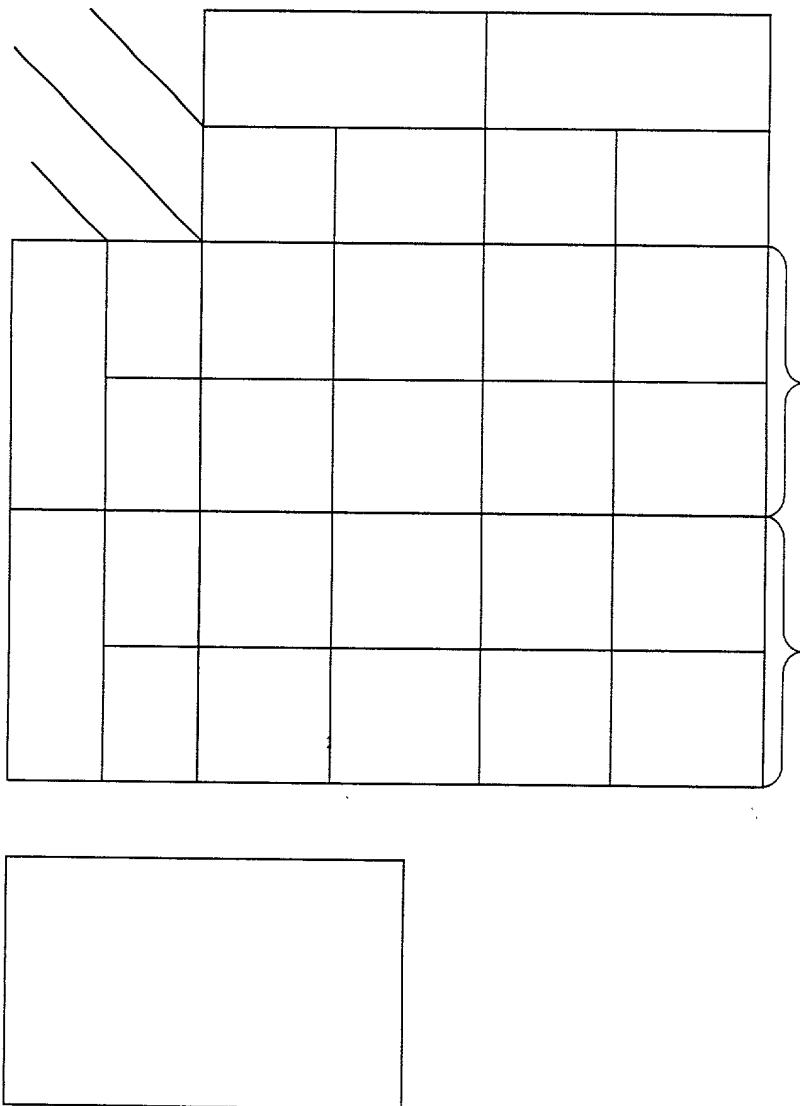


Figure 38

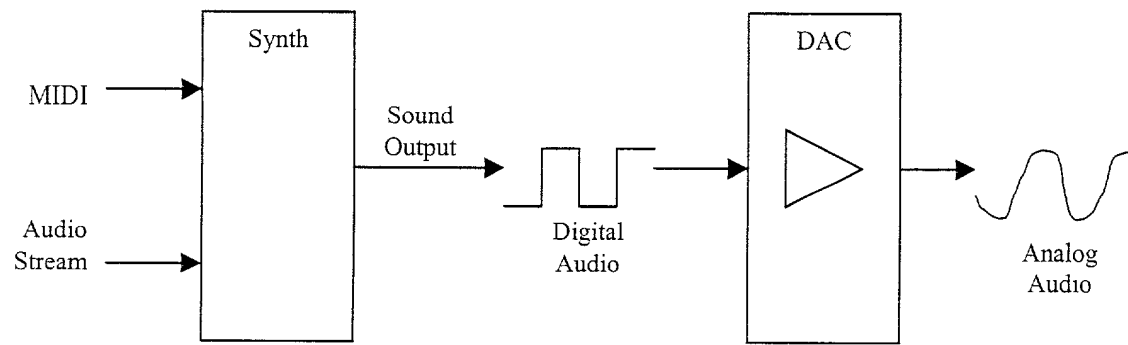


Figure 39  
MIDI/Audio Stream

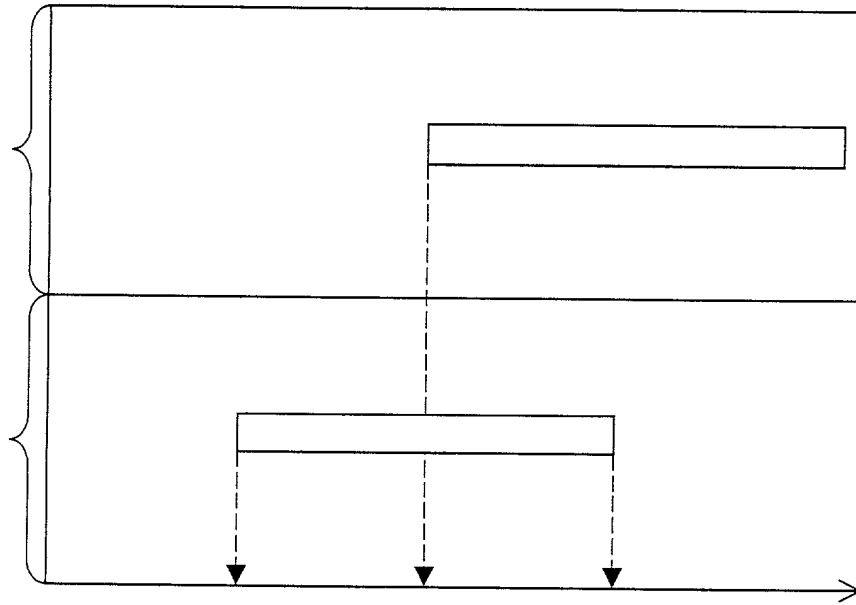


Figure 40  
Simplified MIDI/Audio Stream Timeline



	<b>NRPN Stream (Hexadecimal)</b>	<b>Indication/Meaning</b>
1	B0	Channel Number
2	63	NRPN Controller A (e.g., audio sample type)
3	40	Identification of sample type (e.g., long, short, stereo, mono, etc.)
4	00	Delta time
5	62	NRPN Controller B (e.g., audio effects type)
6	00	Identification of effects type (ping pong, ripple, phaser, distortion, etc.)
7	00	Delta time
8	06	Identification of register for NRPN Controller A value
9	03	NRPN Controller A value (play 3 <sup>rd</sup> audio sample in set, '00' is random)
10	00	Delta time
11	26	Identification of register for NRPN Controller B value
12	07	NRPN Controller B value (apply audio effect #7, '00' is random)

Figure 41  
Simplified NRPN Example

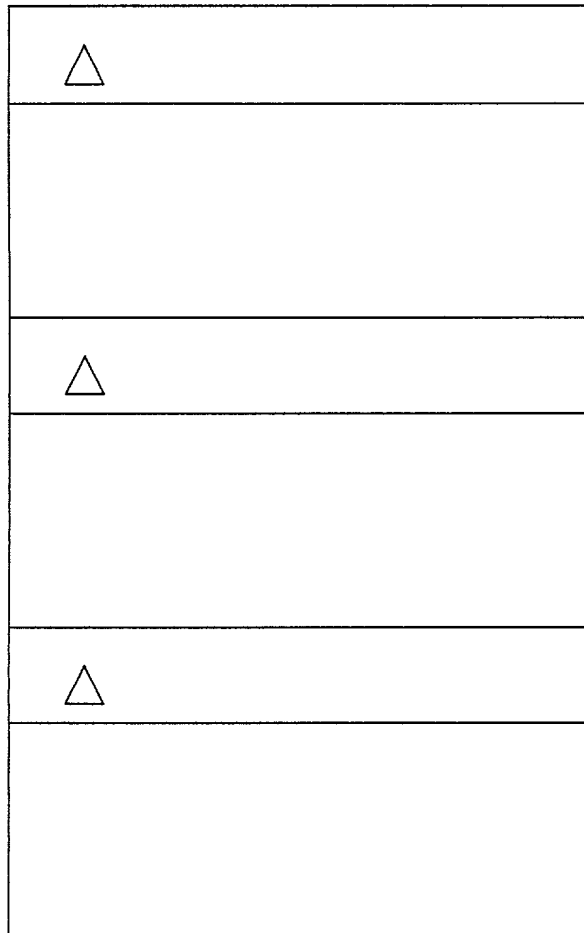


Figure 42  
Simplified Special MIDI Type File